

tion period, the Permian, and traces most of the changes with clearness and skill. This skill is especially manifest when the tissue structure of the fossil plants of the later periods are described and compared with that of the present day. Technicalities have been reduced to a vanishing point, so that it is possible for the general reader to see how truly these newer results reached in the botany of fossils light up the whole field of evolution. The stupendous pageant of plant life in the past is described in dignified language with no attempt at sensational effect.

In this pageant, which moves through creation, plants have a place unique and vitally important. Yet so quietly and so slowly do they live and move that we in our hasty motion often forget that they, equally with ourselves, belong to the living and evolving organisms. . . . This glimpse into the past suggests a prophecy for the future. Evolution, having proceeded steadily for such vast periods, is not likely to stop at the stage reached by the plants of to-day. What will be the main line of advance of the plants of the future, and how will they differ from those of the present? It seems possible that an important group, if not the dominant group, of flowering plants in the future will be so organized that the individual flowers will be very simple, with fewer parts than those of to-day, but that they will be combined in communities of highly specialized individuals in each flower-head or cluster. . . . Whether in the epochs to come flowering plants will continue to hold the dominant position which they now do is an interesting theoretical problem. Flowers were evolved in correlation with insect pollination. One can conceive of a future, when all the earth is under the dominion of man, in which fruits will be sterilized for man's use, as the banana now is, and seed formation largely replaced by gardener's cuttings. . . . Why do plants evolve at all? Why did they do so through the geological ages of the past and why should we expect them to do so in the future? Response to environment is undoubtedly a potent factor in the course of evolution, but it is not the cause of it. There seems to be something inherent in life, something apparently apart from observable factors of environment, which causes slight spontaneous changes or mutations; and some individuals of a species will suddenly develop in a new direction in one or other of their parts. If, then, this places them in a superior position as regards their environment or neighbors, it persists, but if not, those individuals die out.

It remains to say that, while this treatise is readable and attractive, it is sound as a scientific guide, and can serve as a handbook to all botanical teachers who wish to widen their outlook and gain a clearer comprehension of the relations of the whole domain of plant life. It is a stimulating book.

At the Académie de Médecine, Paris, Dr. Lancereaux has presented the results of several hundred observations on a point of general interest outside technical medicine. It concerns the "hobnailed" liver of

certain hard drinkers, or, scientifically, that affection of the liver known as atrophic and retractile granulated cirrhosis. In Paris, at least, this is not a disease of drinkers of alcohol proper, that is, of distilled alcoholic drinks, whose liver indeed grows large, but does not grow retractile. It is exclusively the disease of persons who drink every day for ten years or so from two to four quarts of wine—and in England of those who similarly drink ale or beer. As this fact seems to show that the affection of the liver is not caused by the alcohol in the wines, and as it is not the coloring matter, since white wine is more injurious than red, observations were begun with the various salts existing in modern wines and beers. It was found that the sulphate and bisulphate of potash, which are used to preserve wines and beers, when dissolved with the food of rabbits and dogs, produce a like affection of the liver after varying spaces of time from six to eighteen months. Embryonic conjunctive elements are formed in the portæ and lobular interstices precisely as in the livers of wine and beer-drinkers. The other salts in wines and beers produced no hepatic lesion at all. These experiments have been reproduced three different times since 1893, and Dr. Lancereaux has no doubt that the peculiar liver affection is to be attributed to their presence in drinks. This has been checked off by the topographical statistics of wine-drinker's cirrhosis. It is rare where wine is drunk on the spot in its natural state; it is common where the preservative has been used for transportation. In English beer from two to three grammes of sulphate of potash has been found per litre, and the same liver cirrhosis is common in England. It kills twelve to sixteen persons a week in Paris.

The object of "Abnormal Psychology," by Isador H. Coriat (Moffat, Yard & Co.), the writer says in the introduction, is to bring within the compass of a single volume all the investigations on psychology that are scattered in technical journals. The object has not been attained. In fact, there is very little evidence, save this statement, that any serious attempt has been made to accomplish it, and the book is in reality an unconvincing presentation of the teachings of Freud, Janet, Jastrow, and Prince. Uncritical, unscientific, unauthoritative, the bulk of the volume is made up of winnowings from these writers, and of reports of "cases." As an example of unscientific and uncritical statement we quote: "We may state in general, however, although this will not bear rigid critical analysis, that the brain probably stores up impressions in the manner that the phonograph cylinder stores sound vibrations and reproduces the sounds." Such a statement will bear no kind of analysis. After outlining five theories of the subconscious, he says: "A more practical theory, and one better supported by the evidence, is that active thinking processes may exist although we may not be aware of them. These subconscious mental states of which we are unaware may have intense emotions, may fabricate, or may even work out complex intellectual problems." The theory may be good; the form of stating it robs it of any verisimilitude. Throughout the book there is a marked duality of thought, as if the writer were perversely illustrating his theory of sub-

conscious, and its consequences, in the domain of logical thinking.

Dr. Charles Anthony Goessmann, one of the most conspicuous figures in agricultural chemistry in this country, died a week ago at Amherst, Mass., at the age of eighty-three years. For nearly forty years he was an active member of the Massachusetts Agricultural College; he retired when he was eighty years old, under a pension from the Carnegie Institution. He was educated at the University of Göttingen, where he received his doctor's degree. In 1857 he reported a new sugar plant, *Sorghum saccharatum*, and in the same year came to America, accepting in 1869 the professorship of chemistry in the Massachusetts Agricultural College. He introduced the laboratory method of instruction in his department, establishing in 1878 an experiment station, illustrating to such an extent its practical value that a few years later the State made definite provision for a station, and appointed him head. Under his direction the station became an efficient aid to the farmer and to the agriculture of the State, and was from the first one of the leading institutions of its kind in the country.

Music and Drama.

Musik-Lexikon. Von Hugo Riemann. Leipzig: Max Hesse.

Of all the books on musical subjects ever printed, the one most indispensable to professionals and amateurs alike is Professor Riemann's "Musik-Lexikon." It was an advance on all previous works of the kind when it first came out, in 1882, and since then it has been steadily improved to a point which makes it difficult to glance at any page without marvelling at the author's erudition combined with a rare art of lucid condensation. It is no wonder that the Lexikon has been translated into several other languages (English in 1893), or that in its original it has reached its seventh edition. The first had 1,036 pages, the fifth 1,284, and the seventh has 1,621. It is to be hoped it may not become necessary to divide it into two volumes. To prevent that, it might be advisable to save space by condensing the lists of forgotten and unimportant works by minor composers of past epochs.

What increases an expert's admiration of Riemann's lexicon is the knowledge that it is by no means, like most other works of the kind, a compilation of data from previous books on the same subject, but brings, on nearly every page, evidence of the author's own painstaking researches. He is Germany's leading musical historian of our time, if not of all time, having thrown floods of light on many obscure mediæval points in particular. His textbooks on harmony, counterpoint, fugue, instrumentation, etc., are unsurpassed and original, like everything he does,

and his knowledge is not merely theoretical, but exemplified in a number of compositions. With all his technical knowledge, he is never pedantic, but always searches for the meaning of things; indeed, the most valuable of the articles in the Lexikon are those concerned with musical interpretation and expression. The two columns on Ausdruck should be learned by heart by all who sing or play any instrument, while those on Phrasierung are equally important; Dr. Riemann has invented new signs for correct phrasing, and many compositions by the great masters have been brought out in editions provided with these. He has invented a word much needed, "Agogik," to express those minute modifications of pace so essential to expression and usually referred to by the misleading words, *tempo rubato*. His brief dissertation, under "Dynamik," on changes in loudness, from pianissimo to fortissimo, is poetic as well as suggestive. If music-students would look up these articles, and others along the same lines, they would learn more than from hundreds of the usual technical lessons. Special attention must also be called to the article on the minor mode (Moll), on which the author has important views of his own.

In the case of the principal composers there is usually a brief estimate of the value of their works which is generally admirable; exception may be made to the remarks on Grieg's self-imposed nationalistic handicap—one of the few points in which the professor has obviously copied current comment instead of investigating the matter for himself. He is most liberal in his estimate of modern composers, but draws the line at the two men who are at present the most prominent in Germany; and he does this notwithstanding that both Richard Strauss and Max Reger were for a time his pupils. Instead of feeling proud of this distinction, he reproaches Reger with having got to a point in harmonic daring and modulatory arbitrariness where it has become impossible to follow him; and concerning Strauss he says: "His last works have more and more estranged his friends. Only too distinctly he reveals his striving for sensation at all cost, which is hostile to serious art. More and more does his fame appear as a colossus on feet of clay."

For reasons unknown, the editor of the otherwise excellent new edition of Grove's "Dictionary of Music and Musicians" omitted the names of writers of books on music unless they had also composed some trifles. Owners of the five huge volumes of Grove are thus obliged to seek elsewhere for information on these slighted authors, and in the articles on the masters they will also often look in vain for bibliographic guidance. Under the head of Massenet, for in-

stance, not one book is referred to. Riemann names three out of four or five that are of some importance; he also gives space to lists of the books written by English and American critics. On the other hand, one misses a reference to Maurice Renaud, the greatest of living singing-actors; and why is the incomparable Emma Calvé left out, after having been in previous editions of this Hall of Fame?

Rudolf Besier's comedy "Don," one of the most successful productions of the first season at the New Theatre, has now been published in book form (Duffield & Co.). It is worth the honor of type. On the whole, it reads, perhaps, even better than it acts. It is crisply, brightly, and smoothly written, and the improbability of some of its incidents is less obvious in print than in stage representation. The chief excellence of it as a dramatic composition lies in the deftness and veracity of its characterization and the shrewdness and humor of its observation. The conduct of each individual personage in the cast, with reference to the known facts of a situation common to all of them, is entirely consistent with the mental and moral attitude natural to their indicated habits, training, and experience. Thus a gloss of plausibility is thrown over occurrences which in themselves are unlikely. If the story occasionally borders upon the extravagant, it is, at all events, interesting and amusing, while it is animated by a liberal and humane philosophy.

"Smith," which was produced in the Empire Theatre on Monday evening, is an inferior, possibly an early, specimen of the work of W. S. Maugham. It is probable that its great success in London was due largely to the charm and cleverness of Marie Löhr in the title part. In spite of its assumption of modernity, the personages and the plot are alike conventional. A ruined London broker, who has become a farmer in Rhodesia, returns to England after years of prosperous labor to renew old friendships and find a wife. Disgusted by the heartless, frivolous, and demoralizing life led by his fashionable sister, her complacent husband, her reputed lover, and her feminine associates, he resolves to marry Smith, the parlor-maid, the one woman who has exhibited capacity and a sense of the primitive virtues. It is only one more exercise upon the old theme of the simple and the artificial life. The moral of it all is unobjectionable, if obvious, but the illustration of it is neither rare nor valuable. It is most essentially theatrical when it attempts to be most impressive. Like all Mr. Maugham's writings, it contains some effective satire, many entertaining lines, and some humorous situations, but there is about it more suggestion of labor and artifice than of sincere purpose. The piece is well but not brilliantly played at the Empire. John Drew, one of the most facile of comedians within the somewhat narrow limits of his own personality, is only occasionally at home in the part of the returned colonial, and Miss Mary Boland was only moderately successful as Smith. Individual mention of other players is not necessary.

Julian Edwards, the composer, died last

Monday at the age of fifty-four. Before coming to this country, in 1888, Mr. Edwards was conductor of the Royal English Opera Company and produced some of his best work, notably the opera, "Victorian," which was based upon Longfellow's poem, "The Spanish Student." His other serious operas were "Elfinella" and "Corinne." In addition, he wrote comic operas and musical comedies, a lyrical drama, cantatas, and songs, of which the best known is "When Johnny Comes Marching Home."

Art.

Aquatint Engraving. A chapter in the history of book illustration. By S. T. Prideaux. London: Duckworth & Co.

It is not the title but the sub-title which characterizes this book. Apart from a chapter on "the use of aquatint in France and the aquatint work of Goya," it is essentially a record of English books with aquatint plates published before 1830. That leaves out of consideration prints published separately, American work from the crude early efforts in the *Port-Folio* (1811) to the numerous views by John Hill and W. J. Bennett, the portraits of St. Memin, and all use of the medium by modern artists. If the history of aquatint is, as the author says, "but a small corner in the history of art," hitherto covered, at most, by a chapter or a few pages in handbooks on prints, one might wish that she had taken in the entire field; all the more as her digressions bring in not a few irrelevant facts. However, for what she has done in a little-worked field, in this first separate study of aquatint, the author deserves the thanks of all interested. If she has not furnished a complete history of the art, she has fully covered, for England, the period during which it had its greatest vogue.

Aquatint has a fascination quite its own, and is a pleasing art within its somewhat limited resources. Miss Prideaux recalls some delightful books, notably the "Microcosm of London" and Richard Ayton's voluminous "Voyage Round Great Britain." In the last-named the possibilities of delicate effect are particularly well utilized in the skies, and aquatint was used for a like purpose in several of the mezzotint plates of Turner's "Liber Studiorum," besides those mentioned by the author. Examination of these "Liber" plates makes clear the essential difference between mezzotint and aquatint as then practised. There is delicacy in the aquatint, but flat tones rather than gradations, unchanging surfaces rather than textures. A freer use of the medium in later times has overcome this to a greater or lesser extent.

Aquatint of the period illustrated by this book is virtually a means of reproducing wash-drawings. It was used as such by its inventor, Le Prince, and